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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/543,105	07/22/2005	Jens Richter	016906-0409	4335
22428 7590 04/08/2008 FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007				
EXAMINER				
FORD, JOHN K				
ART UNIT		PAPER NUMBER		
3744				
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04/08/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/543,105

**Applicant(s)**

RICHTER, JENS

**Examiner**

John K. Ford

**Art Unit**

3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF 298)  
Paper No(s)/Mail Date (7-22-2005)
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

Applicant is required to submit a copy of FR 1208367 (prior art cited on applicant's IDS) in response to this action. The document was not forwarded from PCT to this examiner.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, it is ambiguous what limitation is placed on claim 1 (and by extension claims 2-10) by the phrase "in particular a charge air cooler or exhaust gas cooler for motor vehicles." The examiner would suggest deleting it as it really doesn't appear to add any substantive limitation to the claims.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3 and 7 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 06-194082, Figure 3.

In Figure 3, the housing is shown between an inlet diffuser 2 and an outlet diffuser 3. One fluid flows through the common inlet connection 4 and out of connection 5. The other fluid flows between the inlet diffuser 2 and the outlet diffuser 3. A meandering strip seen in Figure 3 is shown more clearly in Figure 1. To have made the meandering strip of metal, if it is not already disclosed to be of metal, would have been obvious to one of ordinary skill to improve heat transfer with official notice being taken of the common use of metals in heat exchangers (see applicant cited Bellovary USP 3,734,177, col. 1, lines 61-63, for example). In a claim directed to a heat exchanger apparatus, the intended fluids to be used in the apparatus do not impart patentability to the apparatus for the reasons stated in MPEP 2114, incorporated here by reference.

Claims 1, 3, 4, 6, 7, 8 and 9 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over SU 1663370.

The Soviet reference shows an inlet diffuser 3 in Figures 1 and 4, a meandering strip in Figure 3 that has different cross-sections for one fluid versus for the other fluid.

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Headers for the fluid internal to the plates are shown in Figure 1 and are labeled 3 and 4 (note that reference numeral "3" is used twice in the reference to designate different structures). To have added an outlet diffuser similar to the one shown in Figure 4 to the opposite end of the heat exchanger, if not already disclosed to be there, would have been obvious to one of ordinary skill in the art to properly channel the fluid out of the heat exchanger. To have made the meandering strip of metal in Figure 3, if it is not already disclosed to be of metal, would have been obvious to one of ordinary skill to improve heat transfer with official notice being taken of the common use of metals in heat exchangers (see applicant cited Bellovary USP 3,734,177, col. 1, lines 61-63, for example). In a claim directed to a heat exchanger apparatus, the intended fluids to be used in the apparatus do not impart patentability to the apparatus for the reasons stated in MPEP 2114, incorporated here by reference.

Claims 1, 3, 4, 5, 6, 7, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over SU '370 as applied to claim 1 above, and further in view of FR 2617583.

In Figures 2, 3 and 6, FR '583 fairly teaches making a meandering strip (as suggested by the continuous "hatching" of the plates 11 in Figure 6) with flow passages of different cross-sections for the two different heat exchanger fluids in the type of heat exchanger shown by SU '370. To have formed the meandering strip of SU '370 in the manner taught by either Figures 2 or 3 of FR '583 would have been obvious to one of

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ordinary skill in the art to improve heat transfer. FR '583 also teaches diffusers 22 and 23 at each end of the heat exchanger (in regard to bolstering the examiner's argument above that SU '370 show illustrates one, but at least contemplates two).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over any of the prior art references or combinations of references as applied to claim 1 above, and further in view of Tongu (USP 5,282,507, Figure 12B, elements 204 and 205) or Bellovary (USP 3,734,177, element 44 with fingers 46) or Valyi (USP 3,331,435, Figure 4).

Each of Tongu (USP 5,282,507, Figure 12B, elements 204 and 205) or Bellovary (USP 3,734,177, element 44 with fingers 46) or Valyi (USP 3,331,435, Figure 4) teaches the comb-like closing-off construction of the meandering strip claimed by applicant. To have used such a comb-like construction in the prior art to simplify manufacture would have been obvious to one of ordinary skill in the art.

Claims 1, 2, 3, 6, 7, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Figure 12B of Tongu (USP 5,282,507) and JP 06-194082.

To have attached diffusers such as shown in JP '082 at 2 and 3 to each end of the heat exchanger shown in Figure 12B of Tongu would have been obvious to one of ordinary skill in the art when adapting it to exchange heat with gasses flowing in the

straight fluid flow path through the heat exchanger. Such a modification would advantageously direct the flow in a straight fluid flow path without encountering a large pressure drop. Alternatively, to have constructed the heat exchanger, inlet and outlet ports and casing of JP '082 in the manner taught by Figure 12B of Tongu would have been obvious to one of ordinary skill in the art to simplify manufacture.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over any of the prior art references or combinations of references as applied to claim 1 above, and further in view of Bellovary et al (USP 3,734,177).

Bellovary teaches turbulator fins 43 inside the passages of a meandering plate heat exchanger such as taught by the prior art. To have added such turbulator fins 43 inside the passages of a meandering plate heat exchanger of the prior art to improve heat exchange would have been obvious to one of ordinary skill in the art. To have attached such a turbulator fin by the conventional technique of soldering, with official notice taken, would have been obvious to one of ordinary skill in the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John K. Ford whose telephone number is 571-272-4911. The examiner can normally be reached on Mon.-Fri. 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John K. Ford/  
Primary Examiner, Art Unit 3744



